INVESTIGATOR'S ANNUAL REPORT

National Park Service

All or some of the information provided may be available to the public

Reporting Year: 2004	**Park:** Shenandoah NP
Principal Investigator: Dr Tony Wolf	**Office Phone:** 540-869-2560 **Email:** vitis@vt.edu
Address: Virginia Tech 595 Laurel Grove Rd Winchester, VA 22602 US	**Office Fax:** 540-869-0862
Additional investigators or key field assistants (first name, last name, office phone, office email): No co-investigators	
Permit#: SHEN-2001-SCI-0003	
Park-assigned Study Id. #: SHEN-00262	
Project Title: Temperature/elevation relationships on the east and west flanks of the Blue Ridge Mountain	
Permit Start Date: Jan 01, 2001	**Permit Expiration Date** May 31, 2004
Study Start Date: Jan 01, 2001	**Study End Date** May 31, 2005
Study Status: Continuing	
Activity Type: Monitoring	
Subject/Discipline: Atmosphere / Climate / Weather	
Objectives: Commercial vineyards are at risk of spring frost and winter cold injury. That risk is reduced with increased elevation; however, there is an upper limit to elevation effects on freeze protection, above which freeze injury risks again increase. The proposed activity in the Shenandoah NP will help define the upper limit to that elevation benefit for Northern Virginia. An optimal elevation will have the dual benefits of minimal risk of raditional frost/freeze events and cooler daytime temperatures relative to lower elevations. Data loggers have been in place on private land at elevations of 1200, 1000, and 800 feet asl. The proposed data collection at 2200 feet asl in the Shenandoah NP is necessary to understand the upper limits of elevation benefit.	
Findings and Status: Hourly temperature data were obtained in spring 2004 from the Shenandoah NP site, as well as six other sites on private property at lower elevations on both the East and the West slopes of the Blue Ridge Mountain. The fall 2003 and initial 2004 data were consistent with prior years' data suggesting an upper limit of about 1800 feet (550 m), above which heat loads (hourly heat accumulations above 10 degrees C) are insufficient to ensure ripening of late-season grape cultivars.	
For this study, were one or more specimens collected and removed from the park but not destroyed during analyses? No	
Funding provided this reporting year by NPS: 0	**Funding provided this reporting year by other sources:** 0
Fill out the following ONLY IF the National Park Service supported this project in this reporting year by providing money to a university or college	
Full name of college or university:	**Annual funding provided by NPS to university or college this reporting**

n/a	**year:** 0